WHAT IS CLAIMED IS:

1. A method of generating mesh data comprising the steps of:

(a) forming grid lines orthogonally crossing each other over a target object;

(b) forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

(c) reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition.

2. The method as claimed in claim 1, wherein the cube data is obtained by determining whether each of mesh elements forming the mesh data forms the target object based on a condition of the target object in the mesh element.

3. The method as claimed in claim 2, wherein the condition of the target object in the mesh element is a ratio of volume of the target object in the mesh element to volume of the mesh element.

4. The method as claimed in claim 1, wherein said step (c) is performed only when the combining of the cube elements is prevented from changing a shape of the target object formed of the cube data.

5. The method as claimed in claim 1, wherein said step (c) is performed so that a substantial shape of the target object formed of the cube data is preserved after the combining of the cube elements.

6. The method as claimed in claim 1, wherein said step (c) is performed only when the combining of the cube elements is prevented from substantially changing a total volume of the cube elements.

7. The method as claimed in claim 1, wherein said step (c) is performed so that a substantial total volume of the cube elements is preserved after the combining of the cube elements.

8. The method as claimed in claim 1, wherein said step (c) combines the cube elements

into composite cube elements so that an aspect ratio of each of surfaces of each of the composite cube elements falls within a predetermined range.

9. The method as claimed in claim 8, wherein:

each of the composite cube elements has a rectangular parallelepiped shape; and

the aspect ratio of each of the surfaces of each of the composite cube elements is a ratio of a length of a first side to a length of a second side of the surface, the first and second sides being orthogonal to each other.

10. The method as claimed in claim 1, wherein the grid lines partitioning the cube elements are reduced in number as the cube elements are combined to be reduced in number.

11. A program for causing a computer to execute a method of generating mesh data, the method comprising the steps of:

(a) forming grid lines orthogonally crossing each other over a target object;

(b) forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object;

and

(c) reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition.

12. A computer-readable recording medium storing a program for causing a computer to execute a method of generating mesh data, the method comprising the steps of:

(a) forming grid lines orthogonally crossing each other over a target object;

(b) forming cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

(c) reducing the cube elements in number by combining the cube elements in accordance with a predetermined condition.

13. An apparatus for generating mesh data comprising:

a setting part forming grid lines orthogonally crossing each other over a target object;

a calculation part obtaining cube data from mesh data obtained by dividing the target object by the grid lines, the cube data being formed of cube elements that are mesh elements forming the target object; and

a combining part combining the cube

elements of the cube data in accordance with a predetermined condition.